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A

SEQUENCE LISTING

<110> Salbaum, Michael J.

<120> NOPE Polypeptides, Encoding Nucleic
Acids and Methods of Use

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<150> US 60/174,496

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<150> US 60/205,789

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Ala	Pro	Thr	Pro	Asp	Leu	Pro	Ile	Gln	Arg	Gly	Pro	Pro	Leu	Pro	Pro		
			740					745					750				
Ala	His	Val	His	Ala	Glu	Ser	Asn	Ser	Ser	Thr	Ser	Ile	Trp	Leu	Arg		
	755						760					765					
Trp	Lys	Lys	Pro	Asp	Phe	Thr	Val	Lys	Ile	Val	Asn	Tyr	Thr	Val			
770						775				780							
Arg	Phe	Gly	Pro	Trp	Gly	Leu	Arg	Asn	Ala	Ser	Leu	Val	Thr	Tyr	Tyr		
785					790					795					800		
Thr	Ser	Ser	Gly	Glu	Asp	Ile	Leu	Ile	Gly	Gly	Leu	Lys	Pro	Phe	Thr		
			805						810					815			
Lys	Tyr	Glu	Phe	Ala	Val	Gln	Ser	His	Gly	Val	Asp	Met	Asp	Gly	Pro		
		820						825					830				
Phe	Gly	Ser	Val	Val	Glu	Arg	Ser	Thr	Leu	Pro	Asp	Arg	Pro	Ser	Thr		
	835						840				845						
Pro	Pro	Ser	Asp	Leu	Arg	Leu	Ser	Pro	Leu	Thr	Pro	Ser	Thr	Val	Arg		
	850					855					860						
Leu	His	Trp	Cys	Pro	Pro	Thr	Glu	Pro	Asn	Gly	Glu	Ile	Val	Glu	Tyr		
865					870				875						880		
Leu	Ile	Leu	Tyr	Ser	Asn	Asn	His	Thr	Gln	Pro	Glu	His	Gln	Trp	Thr		
			885					890						895			
Leu	Leu	Thr	Thr	Glu	Gly	Asn	Ile	Phe	Ser	Ala	Glu	Val	His	Gly	Leu		
		900						905					910				
Glu	Ser	Asp	Thr	Arg	Tyr	Phe	Phe	Lys	Met	Gly	Ala	Arg	Thr	Glu	Val		
	915						920					925					
Gly	Pro	Gly	Pro	Phe	Ser	Arg	Leu	Gln	Asp	Val	Ile	Thr	Leu	Gln	Glu		
	930					935					940						
Thr	Phe	Ser	Asp	Ser	Leu	Asp	Val	His	Ala	Val	Thr	Gly	Ile	Ile	Val		
945					950					955					960		
Gly	Val	Cys	Leu	Gly	Leu	Leu	Cys	Leu	Ala	Cys	Met	Cys	Ala	Gly			
			965					970					975				
Leu	Arg	Gln	Ser	Ser	His	Arg	Glu	Ala	Leu	Pro	Gly	Leu	Ser	Ser	Ser		
		980						985					990				
Gly	Thr	Pro	Gly	Asn	Pro	Ala	Leu	Tyr	Thr	Arg	Ala	Arg	Leu	Gly	Pro		
	995					1000						1005					
Pro	Ser	Val	Pro	Ala	Ala	His	Glu	Leu	Glu	Ser	Leu	Val	His	Pro	Arg		
	1010					1015					1020						
Pro	Gln	Asp	Trp	Ser	Pro	Pro	Pro	Ser	Asp	Val	Glu	Asp	Lys	Ala	Glu		
1025					1030					1035					1040		
Val	His	Ser	Leu	Met	Gly	Gly	Ser	Val	Ser	Asp	Cys	Arg	Gly	His	Ser		
			1045					1050					1055				
Lys	Arg	Lys	Ile	Ser	Trp	Ala	Gln	Ala	Gly	Gly	Pro	Asn	Trp	Ala	Gly		
		1060						1065					1070				
Ser	Trp	Ala	Gly	Cys	Glu	Leu	Pro	Gln	Gly	Ser	Gly	Pro	Arg	Pro	Ala		
	1075						1080					1085					
Leu	Thr	Arg	Ala	Leu	Leu	Pro	Pro	Ala	Gly	Thr	Gly	Gln	Thr	Leu	Leu		

1090	1095	1100
Leu Gln Ala Leu Val Tyr Asp Gly Ile Lys Ser Asn Gly Arg Lys Lys		
1105	1110	1115
Pro Ser Pro Ala Cys Arg Asn Gln Val Glu Ala Glu Val Ile Val His		1120
	1125	1130
Ser Asp Phe Gly Ala Ser Lys Gly Cys Pro Asp Leu His Leu Gln Asp		1135
	1140	1145
Leu Glu Pro Glu Glu Pro Leu Thr Ala Glu Thr Leu Pro Ser Thr Ser		1150
	1155	1160
Gly Ala Val Asp Leu Ser Gln Gly Ala Asp Trp Leu Gly Arg Glu Leu		1165
	1170	1175
Gly Gly Cys Gln Pro Thr Thr Ser Gly Pro Glu Arg Leu Thr Cys Leu		1180
1185	1190	1195
Pro Glu Ala Ala Ser Ala Ser Cys Ser Cys Ser Asp Leu Gln Pro Ser		1200
	1205	1210
Thr Ala Ile Glu Glu Ala Pro Gly Lys Ser Cys Gln Pro Lys Ala Leu		1215
	1220	1225
Cys Pro Leu Thr Val Ser Pro Ser Leu Pro Arg Ala Pro Val Ser Ser		1230
	1235	1240
Ala Gln Val Pro		1245
1250		

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gag gga ccc ctg caa gtg atc ctg ggc cct gag cag gct gtg gtg ctg	96
Glu Gly Pro Leu Gln Val Ile Leu Gly Pro Glu Gln Ala Val Val Leu	
20 25 30	
gac tgc act ttg ggg gct aca gct gct ggg cct ccg acc agg gtg aca	144
Asp Cys Thr Leu Gly Ala Thr Ala Ala Gly Pro Pro Thr Arg Val Thr	
35 40 45	
tgg agc aag gat gga gac act gta cta gag cat gag aac ctg cac ctg	192
Trp Ser Lys Asp Gly Asp Thr Val Leu Glu His Glu Asn Leu His Leu	
50 55 60	
cta ccc aat ggc tcc ctg tgg ctg tcc tca ccc cta gag caa gaa gac	240
Leu Pro Asn Gly Ser Leu Trp Leu Ser Ser Pro Leu Glu Gln Glu Asp	
65 70 75 80	

agc gat gat gag gaa gct ctt agg atc tgg aag gtc act gag ggc agc	288
Ser Asp Asp Glu Glu Ala Leu Arg Ile Trp Lys Val Thr Glu Gly Ser	
85 90 95	
tat tcc tgt ctg gcc cac agc ccg cta gga gtg gtg gcc agc cag gtt	336
Tyr Ser Cys Leu Ala His Ser Pro Leu Gly Val Val Ala Ser Gln Val	
100 105 110	
gct gtg gtc aag ctt gcc aca ctc gaa gac ttc tct ctg cac ccc gag	384
Ala Val Val Lys Leu Ala Thr Leu Glu Asp Phe Ser Leu His Pro Glu	
115 120 125	
tcc cag att gtg gag gag aac ggg aca gca cgc ttt gaa tgc cac acc	432
Ser Gln Ile Val Glu Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr	
130 135 140	
aag ggc ctt cca gcc ccc atc att act tgg gaa aag gac cag gtg acc	480
Lys Gly Leu Pro Ala Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr	
145 150 155 160	
gtg cct gag gag ccc cgg ctc atc act ctt ccc aag tgg ctc ctc cag	528
Val Pro Glu Glu Pro Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln	
165 170 175	
atc cta gat gtc cag gac agt gat gca ggc tcc tac cgc tgc gtg gcc	576
Ile Leu Asp Val Gln Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala	
180 185 190	
acc aat tca gcc cgc caa cga ttc agc cag gag gcc tcg ctc act gtg	624
Thr Asn Ser Ala Arg Gln Arg Phe Ser Gln Glu Ala Ser Leu Thr Val	
195 200 205	
gcc ctc aga ggg tct ttg gag gct acc agg ggg cag gat gtg gtc att	672
Ala Leu Arg Gly Ser Leu Glu Ala Thr Arg Gly Gln Asp Val Val Ile	
210 215 220	
gtg gca gcc cca gag aac acc acg gta gtg tct gga cag aat gta gtg	720
Val Ala Ala Pro Glu Asn Thr Thr Val Val Ser Gly Gln Asn Val Val	
225 230 235 240	
atg gag tgc gtg gcc tct gct gac ccc acc cct ttt gtg tcc tgg gtc	768
Met Glu Cys Val Ala Ser Ala Asp Pro Thr Pro Phe Val Ser Trp Val	
245 250 255	
cga cag gat gga aag cct atc tcc acg gat gtc atc gtt ctg ggc cgg	816
Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp Val Ile Val Leu Gly Arg	
260 265 270	
acc aat cta ctc atc gcc agc gcg cag cct cgg cac tct gga gtc tat	864
Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro Arg His Ser Gly Val Tyr	
275 280 285	
gtc tgc cga gcc aac aag ccc ctc acg cgt gac ttc gcc act gcg gct	912

Val Cys Arg Ala Asn Lys Pro Leu Thr Arg Asp Phe Ala Thr Ala Ala	
290	300
gct gag ctc cga gtg ctt gct gcc cca gcc atc tcg cag gca ccc gag	960
Ala Glu Leu Arg Val Leu Ala Ala Pro Ala Ile Ser Gln Ala Pro Glu	
305	320
gcg ctc tcg cgg acg cgg gcc agc acc gcg cgc ttc gtg tgc cgg gcg	1008
Ala Leu Ser Arg Thr Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala	
325	335
tcc ggg gag cca cgg ccc gcg ctg cac tgg ctg cac gac ggg atc ccg	1056
Ser Gly Glu Pro Arg Pro Ala Leu His Trp Leu His Asp Gly Ile Pro	
340	350
ttg cga ccc aat ggg cgc gtc aag gtg cag ggc ggt ggc ggc agc ttg	1104
Leu Arg Pro Asn Gly Arg Val Lys Val Gln Gly Gly Gly Gly Ser Leu	
355	365
gtc atc act cag atc ggc ctg cag gac gct ggc tac tac cag tgc gta	1152
Val Ile Thr Gln Ile Gly Leu Gln Asp Ala Gly Tyr Tyr Gln Cys Val	
370	380
gca gaa aac agc gcg gga act gcc tgt gcc gct gcg ccc ctg gcg gta	1200
Ala Glu Asn Ser Ala Gly Thr Ala Cys Ala Ala Ala Pro Leu Ala Val	
385	400
gtg gtg cgc gag ggg ctg ccc agc gcc ccg act cgg gtc aca gcc acg	1248
Val Val Arg Glu Gly Leu Pro Ser Ala Pro Thr Arg Val Thr Ala Thr	
405	415
ccg ctg agc agc tcc tct gtg ctg gtg gcc tgg gag cgg cct gag ttg	1296
Pro Leu Ser Ser Ser Val Leu Val Ala Trp Glu Arg Pro Glu Leu	
420	430
cac agc gag caa atc att ggc ttc tct ctt cac tac caa aag gca agg	1344
His Ser Glu Gln Ile Ile Gly Phe Ser Leu His Tyr Gln Lys Ala Arg	
435	445
gga gtg gac aat gtg gag tac cag ttt gca gta aac aat gac acc aca	1392
Gly Val Asp Asn Val Glu Tyr Gln Phe Ala Val Asn Asn Asp Thr Thr	
450	460
gag ctg cag gtt cgg gac ctg gaa ccc aac acg gat tat gag ttc tac	1440
Glu Leu Gln Val Arg Asp Leu Glu Pro Asn Thr Asp Tyr Glu Phe Tyr	
465	480
gtg gtg gcc tac tcc cag ctg ggg gcc agc cga acc tcc agc cca gcc	1488
Val Val Ala Tyr Ser Gln Leu Gly Ala Ser Arg Thr Ser Ser Pro Ala	
485	495
ctg gtg cat aca ctg gac gat gtc ccc agc gca gca ccc cag ctt acc	1536
Leu Val His Thr Leu Asp Asp Val Pro Ser Ala Ala Pro Gln Leu Thr	

500	505	510	
ttg tcc agc ccc aac ccc tgc gac atc agg gtg gca tgg ctg ccc ctg			1584
Leu Ser Ser Pro Asn Pro Ser Asp Ile Arg Val Ala Trp Leu Pro Leu			
515	520	525	
ccc tcc agc ctg agc aat gga cag gtg ctg aag tac aag ata gag tac			1632
Pro Ser Ser Leu Ser Asn Gly Gln Val Leu Lys Tyr Lys Ile Glu Tyr			
530	535	540	
ggt ttg ggg aag gaa gat cag gtt ttc tcc acc gag gtg cct gga aat			1680
Gly Leu Gly Lys Glu Asp Gln Val Phe Ser Thr Glu Val Pro Gly Asn			
545	550	555	560
gag aca caa ctt acg tta aac tca ctt cag cca aac aaa gtg tac cga			1728
Glu Thr Gln Leu Thr Leu Asn Ser Leu Gln Pro Asn Lys Val Tyr Arg			
565	570	575	
gtc cgg att tca gct ggc act ggc gct ggc tat gga gtc cct tct cag			1776
Val Arg Ile Ser Ala Gly Thr Gly Ala Gly Tyr Gly Val Pro Ser Gln			
580	585	590	
tgg atg cag cac agg aca cct ggt gtg cac aac cag agc cat gtt ccc			1824
Trp Met Gln His Arg Thr Pro Gly Val His Asn Gln Ser His Val Pro			
595	600	605	
ttt gcc cct gca gaa ttg aag gtg agg gca aag atg gag tcc ctg gtg			1872
Phe Ala Pro Ala Glu Leu Lys Val Arg Ala Lys Met Glu Ser Leu Val			
610	615	620	
gtg tca tgg cag ccg ccc cct cac ccc acc cag atc tct gga tac aaa			1920
Val Ser Trp Gln Pro Pro Pro His Pro Thr Gln Ile Ser Gly Tyr Lys			
625	630	635	640
ctc tac tgg gga gag gtg gga aca gag gag gag gca gat ggt gac cgc			1968
Leu Tyr Trp Gly Glu Val Gly Thr Glu Glu Glu Ala Asp Gly Asp Arg			
645	650	655	
ccc cca ggg ggt cgt gga gat caa gct tgg gac gtc ggg ccc gtg cgg			2016
Pro Pro Gly Gly Arg Gly Asp Gln Ala Trp Asp Val Gly Pro Val Arg			
660	665	670	
ctg aag aag aaa gtg aag cag tat gaa ctg acc cag tta gtc cct ggc			2064
Leu Lys Lys Lys Val Lys Gln Tyr Glu Leu Thr Gln Leu Val Pro Gly			
675	680	685	
agg ccg tac gag gtg aag ctc gta gct ttc aac aaa cac gag gac ggc			2112
Arg Pro Tyr Glu Val Lys Leu Val Ala Phe Asn Lys His Glu Asp Gly			
690	695	700	
tac gct gct gtg tgg aag ggc aag acg gag aag gcg ccc acg cca gac			2160
Tyr Ala Ala Val Trp Lys Gly Lys Thr Glu Lys Ala Pro Thr Pro Asp			
705	710	715	720

ctg cct atc cag agg ggg cca ccg ctg cct cct gcc cat gtc cac gca	2208
Leu Pro Ile Gln Arg Gly Pro Pro Leu Pro Pro Ala His Val His Ala	
725 730 735	
gag tca aac agc tcc act tcc att tgg ctt cgg tgg aag aag cca gac	2256
Glu Ser Asn Ser Ser Thr Ser Ile Trp Leu Arg Trp Lys Lys Pro Asp	
740 745 750	
ttt acc act gtc aag att gtc aac tac act gta cgc ttc ggc ccc tgg	2304
Phe Thr Thr Val Lys Ile Val Asn Tyr Thr Val Arg Phe Gly Pro Trp	
755 760 765	
ggg ctc agg aat gct tcc ctg gtc acc tac tat acc agc tct gga gaa	2352
Gly Leu Arg Asn Ala Ser Leu Val Thr Tyr Tyr Thr Ser Ser Gly Glu	
770 775 780	
gac att ctc att ggc ggc ctg aaa cca ttt acc aag tac gag ttt gcg	2400
Asp Ile Leu Ile Gly Gly Leu Lys Pro Phe Thr Lys Tyr Glu Phe Ala	
785 790 795 800	
gta cag tcc cac gga gtg gat atg gat ggg ccc ttt ggc tcc gtc gta	2448
Val Gln Ser His Gly Val Asp Met Asp Gly Pro Phe Gly Ser Val Val	
805 810 815	
gaa cgc tcc acc ctg cct gac cgg cct tca aca cct cct tct gac ctg	2496
Glu Arg Ser Thr Leu Pro Asp Arg Pro Ser Thr Pro Pro Ser Asp Leu	
820 825 830	
cgc ctg agc ccc ctg aca cca tcc acc gtt cgg tta cac tgg tgt ccc	2544
Arg Leu Ser Pro Leu Thr Pro Ser Thr Val Arg Leu His Trp Cys Pro	
835 840 845	
ccc acg gag ccc aat ggt gag att gtg gag tat cta att ctc tac agc	2592
Pro Thr Glu Pro Asn Gly Glu Ile Val Glu Tyr Leu Ile Leu Tyr Ser	
850 855 860	
aac aac cac acc cag ccc gaa cac cag tgg aca ctg ctc acc aca gag	2640
Asn Asn His Thr Gln Pro Glu His Gln Trp Thr Leu Leu Thr Thr Glu	
865 870 875 880	
gga aac atc ttc agt gca gag gtc cat ggc cta gag agt gac act cgg	2688
Gly Asn Ile Phe Ser Ala Glu Val His Gly Leu Glu Ser Asp Thr Arg	
885 890 895	
tat ttc ttc aag atg gga gcc cgc aca gag gtg ggg cct ggg ccc ttt	2736
Tyr Phe Phe Lys Met Gly Ala Arg Thr Glu Val Gly Pro Gly Pro Phe	
900 905 910	
tcc cgc ttg cag gat gtg att act ctg caa gag aca ttc tca gac tcc	2784
Ser Arg Leu Gln Asp Val Ile Thr Leu Gln Glu Thr Phe Ser Asp Ser	
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ttg gat gtg cac
Leu Asp Val His
930

2796

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20 25 30
Asp Cys Thr Leu Gly Ala Thr Ala Ala Gly Pro Pro Thr Arg Val Thr
35 40 45
Trp Ser Lys Asp Gly Asp Thr Val Leu Glu His Glu Asn Leu His Leu
50 55 60
Leu Pro Asn Gly Ser Leu Trp Leu Ser Ser Pro Leu Glu Gln Glu Asp
65 70 75 80
Ser Asp Asp Glu Glu Ala Leu Arg Ile Trp Lys Val Thr Glu Gly Ser
85 90 95
Tyr Ser Cys Leu Ala His Ser Pro Leu Gly Val Val Ala Ser Gln Val
100 105 110
Ala Val Val Lys Leu Ala Thr Leu Glu Asp Phe Ser Leu His Pro Glu
115 120 125
Ser Gln Ile Val Glu Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr
130 135 140
Lys Gly Leu Pro Ala Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr
145 150 155 160
Val Pro Glu Glu Pro Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln
165 170 175
Ile Leu Asp Val Gln Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala
180 185 190
Thr Asn Ser Ala Arg Gln Arg Phe Ser Gln Glu Ala Ser Leu Thr Val
195 200 205
Ala Leu Arg Gly Ser Leu Glu Ala Thr Arg Gly Gln Asp Val Val Ile
210 215 220
Val Ala Ala Pro Glu Asn Thr Thr Val Val Ser Gly Gln Asn Val Val
225 230 235 240
Met Glu Cys Val Ala Ser Ala Asp Pro Thr Pro Phe Val Ser Trp Val
245 250 255
Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp Val Ile Val Leu Gly Arg
260 265 270
Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro Arg His Ser Gly Val Tyr
275 280 285
Val Cys Arg Ala Asn Lys Pro Leu Thr Arg Asp Phe Ala Thr Ala Ala
290 295 300
Ala Glu Leu Arg Val Leu Ala Ala Pro Ala Ile Ser Gln Ala Pro Glu
305 310 315 320
Ala Leu Ser Arg Thr Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala
325 330 335

Ser	Gly	Glu	Pro	Arg	Pro	Ala	Leu	His	Trp	Leu	His	Asp	Gly	Ile	Pro	340	345	350
Leu	Arg	Pro	Asn	Gly	Arg	Val	Lys	Val	Gln	Gly	Gly	Gly	Gly	Ser	Leu	355	360	365
Val	Ile	Thr	Gln	Ile	Gly	Leu	Gln	Asp	Ala	Gly	Tyr	Tyr	Gln	Cys	Val	370	375	380
Ala	Glu	Asn	Ser	Ala	Gly	Thr	Ala	Cys	Ala	Ala	Ala	Pro	Leu	Ala	Val	385	390	395
Val	Val	Arg	Glu	Gly	Leu	Pro	Ser	Ala	Pro	Thr	Arg	Val	Thr	Ala	Thr	405	410	415
Pro	Leu	Ser	Ser	Ser	Ser	Val	Leu	Val	Ala	Trp	Glu	Arg	Pro	Glu	Leu	420	425	430
His	Ser	Glu	Gln	Ile	Ile	Gly	Phe	Ser	Leu	His	Tyr	Gln	Lys	Ala	Arg	435	440	445
Gly	Val	Asp	Asn	Val	Glu	Tyr	Gln	Phe	Ala	Val	Asn	Asn	Asp	Thr	Thr	450	455	460
Glu	Leu	Gln	Val	Arg	Asp	Leu	Glu	Pro	Asn	Thr	Asp	Tyr	Glu	Phe	Tyr	465	470	475
Val	Val	Ala	Tyr	Ser	Gln	Leu	Gly	Ala	Ser	Arg	Thr	Ser	Ser	Pro	Ala	485	490	495
Leu	Val	His	Thr	Leu	Asp	Asp	Val	Pro	Ser	Ala	Ala	Pro	Gln	Leu	Thr	500	505	510
Leu	Ser	Ser	Pro	Asn	Pro	Ser	Asp	Ile	Arg	Val	Ala	Trp	Leu	Pro	Leu	515	520	525
Pro	Ser	Ser	Leu	Ser	Asn	Gly	Gln	Val	Leu	Lys	Tyr	Lys	Ile	Glu	Tyr	530	535	540
Gly	Leu	Gly	Lys	Glu	Asp	Gln	Val	Phe	Ser	Thr	Glu	Val	Pro	Gly	Asn	545	550	555
Glu	Thr	Gln	Leu	Thr	Leu	Asn	Ser	Leu	Gln	Pro	Asn	Lys	Val	Tyr	Arg	565	570	575
Val	Arg	Ile	Ser	Ala	Gly	Thr	Gly	Ala	Gly	Tyr	Gly	Val	Pro	Ser	Gln	580	585	590
Trp	Met	Gln	His	Arg	Thr	Pro	Gly	Val	His	Asn	Gln	Ser	His	Val	Pro	595	600	605
Phe	Ala	Pro	Ala	Glu	Leu	Lys	Val	Arg	Ala	Lys	Met	Glu	Ser	Leu	Val	610	615	620
Val	Ser	Trp	Gln	Pro	Pro	Pro	His	Pro	Thr	Gln	Ile	Ser	Gly	Tyr	Lys	625	630	635
Leu	Tyr	Trp	Gly	Glu	Val	Gly	Thr	Glu	Glu	Glu	Ala	Asp	Gly	Asp	Arg	645	650	655
Pro	Pro	Gly	Gly	Arg	Gly	Asp	Gln	Ala	Trp	Asp	Val	Gly	Pro	Val	Arg	660	665	670
Leu	Lys	Lys	Lys	Val	Lys	Gln	Tyr	Glu	Leu	Thr	Gln	Leu	Val	Pro	Gly	675	680	685
Arg	Pro	Tyr	Glu	Val	Lys	Leu	Val	Ala	Phe	Asn	Lys	His	Glu	Asp	Gly	690	695	700
Tyr	Ala	Ala	Val	Trp	Lys	Gly	Lys	Thr	Glu	Lys	Ala	Pro	Thr	Pro	Asp	705	710	715
Leu	Pro	Ile	Gln	Arg	Gly	Pro	Pro	Leu	Pro	Pro	Ala	His	Val	His	Ala	725	730	735
Glu	Ser	Asn	Ser	Ser	Thr	Ser	Ile	Trp	Leu	Arg	Trp	Lys	Lys	Pro	Asp	740	745	750
Phe	Thr	Thr	Val	Lys	Ile	Val	Asn	Tyr	Thr	Val	Arg	Phe	Gly	Pro	Trp			

755		760		765
Gly Leu Arg Asn Ala Ser	Leu Val Thr Tyr Tyr Thr	Ser Ser Gly Glu		
770	775	780		
Asp Ile Leu Ile Gly Gly	Leu Lys Pro Phe Thr Lys Tyr Glu Phe Ala			
785	790	795		800
Val Gln Ser His Gly Val	Asp Met Asp Gly Pro Phe Gly Ser Val Val			
	805	810		815
Glu Arg Ser Thr Leu Pro	Asp Arg Pro Ser Thr Pro Pro Ser Asp Leu			
	820	825		830
Arg Leu Ser Pro Leu Thr	Pro Ser Thr Val Arg Leu His Trp Cys Pro			
	835	840		845
Pro Thr Glu Pro Asn Gly	Glu Ile Val Glu Tyr Leu Ile Leu Tyr Ser			
	850	855		860
Asn Asn His Thr Gln Pro	Glu His Gln Trp Thr Leu Leu Thr Thr Glu			
865	870	875		880
Gly Asn Ile Phe Ser Ala	Glu Val His Gly Leu Glu Ser Asp Thr Arg			
	885	890		895
Tyr Phe Phe Lys Met Gly	Ala Arg Thr Glu Val Gly Pro Gly Pro Phe			
	900	905		910
Ser Arg Leu Gln Asp Val	Ile Thr Leu Gln Glu Thr Phe Ser Asp Ser			
	915	920		925
Leu Asp Val His				
930				

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acc cca gga aac cca gcg ctc tac aca aga gct cgg ctt ggg cct ccc	96
Thr Pro Gly Asn Pro Ala Leu Tyr Thr Arg Ala Arg Leu Gly Pro Pro	
20 25 30	
agt gtc cct gct gcc cat gag ttg gag tcc ctc gtg cat cct cgt ccc	144
Ser Val Pro Ala Ala His Glu Leu Glu Ser Leu Val His Pro Arg Pro	
35 40 45	
cag gat tgg tcc cca cca ccc tca gat gtg gaa gac aag gct gaa gta	192
Gln Asp Trp Ser Pro Pro Pro Ser Asp Val Glu Asp Lys Ala Glu Val	
50 55 60	
cac agc ctt atg ggt ggc agt gtt tca gat tgc cgg ggc cac tcc aag	240
His Ser Leu Met Gly Gly Ser Val Ser Asp Cys Arg Gly His Ser Lys	

65	70	75	80	
aga aag atc tcc tgg gct cag gca ggg gga cca aac tgg gca ggc tcc				288
Arg Lys Ile Ser Trp Ala Gln Ala Gly Gly Pro Asn Trp Ala Gly Ser	85	90	95	
tgg gca ggc tgt gag ctg ccc cag ggt agt ggt cca agg ccg gct ctg				336
Trp Ala Gly Cys Glu Leu Pro Gln Gly Ser Gly Pro Arg Pro Ala Leu	100	105	110	
acc cgt gct ctg ctg cct cca gcg gga acc ggg cag aca ctg ctg ctg				384
Thr Arg Ala Leu Leu Pro Pro Ala Gly Thr Gly Gln Thr Leu Leu Leu	115	120	125	
caa gcc ctg gtg tat gac ggc ata aag agc aac ggg aga aag aag ccg				432
Gln Ala Leu Val Tyr Asp Gly Ile Lys Ser Asn Gly Arg Lys Lys Pro	130	135	140	
tcc cca gcc tgc agg aat cag gtg gaa gct gag gtc att gtc cac tcc				480
Ser Pro Ala Cys Arg Asn Gln Val Glu Ala Glu Val Ile Val His Ser	145	150	155	160
gac ttc ggt gca tcc aaa gga tgt cct gac ctc cac ctc caa gac ctg				528
Asp Phe Gly Ala Ser Lys Gly Cys Pro Asp Leu His Leu Gln Asp Leu	165	170	175	
gag cca gag gaa cca ctg act gca gag act ctg cct tcc acg tct gga				576
Glu Pro Glu Glu Pro Leu Thr Ala Glu Thr Leu Pro Ser Thr Ser Gly	180	185	190	
gct gtg gat ctg tct caa gga gca gac tgg ctg ggc agg gag ctg gga				624
Ala Val Asp Leu Ser Gln Gly Ala Asp Trp Leu Gly Arg Glu Leu Gly	195	200	205	
ggg tgc caa cca aca acc agt ggg cca gag agg ctc acc tgc ttg cca				672
Gly Cys Gln Pro Thr Thr Ser Gly Pro Glu Arg Leu Thr Cys Leu Pro	210	215	220	
gaa gca gcc agt gcc tcc tgc tcc tgc tca gac ctc cag ccc agc act				720
Glu Ala Ala Ser Ala Ser Cys Ser Cys Ser Asp Leu Gln Pro Ser Thr	225	230	235	240
gct ata gag gag gcc cct ggg aaa agc tgc cag ccc aaa gcc ctg tgt				768
Ala Ile Glu Glu Ala Pro Gly Lys Ser Cys Gln Pro Lys Ala Leu Cys	245	250	255	
cct cta aca gtc agc cca agc ctt ccc agg gcc cct gtc tcc tct gct				816
Pro Leu Thr Val Ser Pro Ser Leu Pro Arg Ala Pro Val Ser Ser Ala	260	265	270	
cag gtc ccc				825
Gln Val Pro				
275				

<210> 6
 <211> 275
 <212> PRT
 <213> Mus musculus

<400> 6
 Arg Gln Ser Ser His Arg Glu Ala Leu Pro Gly Leu Ser Ser Ser Gly
 1 5 10 15
 Thr Pro Gly Asn Pro Ala Leu Tyr Thr Arg Ala Arg Leu Gly Pro Pro
 20 25 30
 Ser Val Pro Ala Ala His Glu Leu Glu Ser Leu Val His Pro Arg Pro
 35 40 45
 Gln Asp Trp Ser Pro Pro Pro Ser Asp Val Glu Asp Lys Ala Glu Val
 50 55 60
 His Ser Leu Met Gly Gly Ser Val Ser Asp Cys Arg Gly His Ser Lys
 65 70 75 80
 Arg Lys Ile Ser Trp Ala Gln Ala Gly Gly Pro Asn Trp Ala Gly Ser
 85 90 95
 Trp Ala Gly Cys Glu Leu Pro Gln Gly Ser Gly Pro Arg Pro Ala Leu
 100 105 110
 Thr Arg Ala Leu Leu Pro Pro Ala Gly Thr Gly Gln Thr Leu Leu Leu
 115 120 125
 Gln Ala Leu Val Tyr Asp Gly Ile Lys Ser Asn Gly Arg Lys Lys Pro
 130 135 140
 Ser Pro Ala Cys Arg Asn Gln Val Glu Ala Glu Val Ile Val His Ser
 145 150 155 160
 Asp Phe Gly Ala Ser Lys Gly Cys Pro Asp Leu His Leu Gln Asp Leu
 165 170 175
 Glu Pro Glu Glu Pro Leu Thr Ala Glu Thr Leu Pro Ser Thr Ser Gly
 180 185 190
 Ala Val Asp Leu Ser Gln Gly Ala Asp Trp Leu Gly Arg Glu Leu Gly
 195 200 205
 Gly Cys Gln Pro Thr Thr Ser Gly Pro Glu Arg Leu Thr Cys Leu Pro
 210 215 220
 Glu Ala Ala Ser Ala Ser Cys Ser Cys Ser Asp Leu Gln Pro Ser Thr
 225 230 235 240
 Ala Ile Glu Glu Ala Pro Gly Lys Ser Cys Gln Pro Lys Ala Leu Cys
 245 250 255
 Pro Leu Thr Val Ser Pro Ser Leu Pro Arg Ala Pro Val Ser Ser Ala
 260 265 270
 Gln Val Pro
 275

<210> 7
 <211> 243
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS

<222> (1) ... (243)

<400> 7

cct	gag	cag	gct	gtg	gtg	ctg	gac	tgc	act	ttg	ggg	gct	aca	gct	gct	48
Pro	Glu	Gln	Ala	Val	Val	Leu	Asp	Cys	Thr	Leu	Gly	Ala	Thr	Ala	Ala	
1				5					10					15		

ggg	cct	ccg	acc	agg	gtg	aca	tgg	agc	aag	gat	gga	gac	act	gta	cta	96
Gly	Pro	Pro	Thr	Arg	Val	Thr	Trp	Ser	Lys	Asp	Gly	Asp	Thr	Val	Leu	
			20					25					30			

gag	cat	gag	aac	ctg	cac	ctg	cta	ccc	aat	ggc	tcc	ctg	tgg	ctg	tcc	144
Glu	His	Glu	Asn	Leu	His	Leu	Leu	Pro	Asn	Gly	Ser	Leu	Trp	Leu	Ser	
		35				40					45					

tca	ccc	cta	gag	caa	gaa	gac	agc	gat	gat	gag	gaa	gct	ctt	agg	atc	192
Ser	Pro	Leu	Glu	Gln	Glu	Asp	Ser	Asp	Asp	Glu	Glu	Ala	Leu	Arg	Ile	
	50					55					60					

tgg	aag	gtc	act	gag	ggc	agc	tat	tcc	tgt	ctg	gcc	cac	agc	ccg	cta	240
Trp	Lys	Val	Thr	Glu	Gly	Ser	Tyr	Ser	Cys	Leu	Ala	His	Ser	Pro	Leu	
65					70					75					80	

gga																243
Gly																

<210> 8

<211> 81

<212> PRT

<213> Mus musculus

<400> 8

Pro	Glu	Gln	Ala	Val	Val	Leu	Asp	Cys	Thr	Leu	Gly	Ala	Thr	Ala	Ala	
1				5					10					15		
Gly	Pro	Pro	Thr	Arg	Val	Thr	Trp	Ser	Lys	Asp	Gly	Asp	Thr	Val	Leu	
			20					25					30			
Glu	His	Glu	Asn	Leu	His	Leu	Leu	Pro	Asn	Gly	Ser	Leu	Trp	Leu	Ser	
		35				40					45					
Ser	Pro	Leu	Glu	Gln	Glu	Asp	Ser	Asp	Asp	Glu	Glu	Ala	Leu	Arg	Ile	
	50					55				60						
Trp	Lys	Val	Thr	Glu	Gly	Ser	Tyr	Ser	Cys	Leu	Ala	His	Ser	Pro	Leu	
65					70					75					80	
Gly																

<210> 9

<211> 192

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)...(192)

<400> 9

gag aac ggg aca gca cgc ttt gaa tgc cac acc aag ggc ctt cca gcc 48

Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr Lys Gly Leu Pro Ala

1

5

10

15

ccc atc att act tgg gaa aag gac cag gtg acc gtg cct gag gag ccc 96

Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr Val Pro Glu Glu Pro

20

25

30

cgg ctc atc act ctt ccc aag tgg ctc ctc cag atc cta gat gtc cag 144

Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln Ile Leu Asp Val Gln

35

40

45

gac agt gat gca ggc tcc tac cgc tgc gtg gcc acc aat tca gcc cgc 192

Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala Thr Asn Ser Ala Arg

50

55

60

<210> 10

<211> 64

<212> PRT

<213> Mus musculus

<400> 10

Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr Lys Gly Leu Pro Ala

1

5

10

15

Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr Val Pro Glu Glu Pro

20

25

30

Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln Ile Leu Asp Val Gln

35

40

45

Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala Thr Asn Ser Ala Arg

50

55

60

<210> 11

<211> 189

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)...(189)

<400> 11

tct gga cag aat gta gtg atg gag tgc gtg gcc tct gct gac ccc acc 48

Ser Gly Gln Asn Val Val Met Glu Cys Val Ala Ser Ala Asp Pro Thr

1

5

10

15

cct ttt gtg tcc tgg gtc cga cag gat gga aag cct atc tcc acg gat 96
Pro Phe Val Ser Trp Val Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp
20 25 30

gtc atc gtt ctg ggc cgg acc aat cta ctc atc gcc agc gcg cag cct 144
Val Ile Val Leu Gly Arg Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro
35 40 45

cgg cac tct gga gtc tat gtc tgc cga gcc aac aag ccc ctc acg 189
Arg His Ser Gly Val Tyr Val Cys Arg Ala Asn Lys Pro Leu Thr
50 55 60

<210> 12
<211> 63
<212> PRT
<213> Mus musculus

<400> 12
Ser Gly Gln Asn Val Val Met Glu Cys Val Ala Ser Ala Asp Pro Thr
1 5 10 15
Pro Phe Val Ser Trp Val Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp
20 25 30
Val Ile Val Leu Gly Arg Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro
35 40 45
Arg His Ser Gly Val Tyr Val Cys Arg Ala Asn Lys Pro Leu Thr
50 55 60

<210> 13
<211> 195
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(195)

<400> 13
cgg gcc agc acc gcg cgc ttc gtg tgc cgg gcg tcc ggg gag cca cgg 48
Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala Ser Gly Glu Pro Arg
1 5 10 15

ccc gcg ctg cac tgg ctg cac gac ggg atc ccg ttg cga ccc aat ggg 96
Pro Ala Leu His Trp Leu His Asp Gly Ile Pro Leu Arg Pro Asn Gly
20 25 30

cgc gtc aag gtg cag ggc ggt ggc ggc agc ttg gtc atc act cag atc 144
Arg Val Lys Val Gln Gly Gly Gly Ser Leu Val Ile Thr Gln Ile
35 40 45

ggc ctg cag gac gct ggc tac tac cag tgc gta gca gaa aac agc gcg 192

Gly Leu Gln Asp Ala Gly Tyr Tyr Gln Cys Val Ala Glu Asn Ser Ala
 50 55 60

gga
 Gly
 65

195

<210> 14
 <211> 65
 <212> PRT
 <213> Mus musculus

<400> 14
 Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala Ser Gly Glu Pro Arg
 1 5 10 15
 Pro Ala Leu His Trp Leu His Asp Gly Ile Pro Leu Arg Pro Asn Gly
 20 25 30
 Arg Val Lys Val Gln Gly Gly Gly Ser Leu Val Ile Thr Gln Ile
 35 40 45
 Gly Leu Gln Asp Ala Gly Tyr Tyr Gln Cys Val Ala Glu Asn Ser Ala
 50 55 60
 Gly
 65

<210> 15
 <211> 249
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)...(249)

<400> 15
 agc gcc ccg act cgg gtc aca gcc acg ccg ctg agc agc tcc tct gtg 48
 Ser Ala Pro Thr Arg Val Thr Ala Thr Pro Leu Ser Ser Ser Val
 1 5 10 15
 ctg gtg gcc tgg gag cgg cct gag ttg cac agc gag caa atc att ggc 96
 Leu Val Ala Trp Glu Arg Pro Glu Leu His Ser Glu Gln Ile Ile Gly
 20 25 30
 ttc tct ctt cac tac caa aag gca agg gga gtg gac aat gtg gag tac 144
 Phe Ser Leu His Tyr Gln Lys Ala Arg Gly Val Asp Asn Val Glu Tyr
 35 40 45
 cag ttt gca gta aac aat gac acc aca gag ctg cag gtt cgg gac ctg 192
 Gln Phe Ala Val Asn Asn Asp Thr Thr Glu Leu Gln Val Arg Asp Leu
 50 55 60
 gaa ccc aac acg gat tat gag ttc tac gtg gtg gcc tac tcc cag ctg 240

Glu Pro Asn Thr Asp Tyr Glu Phe Tyr Val Val Ala Tyr Ser Gln Leu
65 70 75 80

ggg gcc agc
Gly Ala Ser

249

<210> 16

<211> 83

<212> PRT

<213> Mus musculus

<400> 16

Ser Ala Pro Thr Arg Val Thr Ala Thr Pro Leu Ser Ser Ser Ser Val
1 5 10 15
Leu Val Ala Trp Glu Arg Pro Glu Leu His Ser Glu Gln Ile Ile Gly
20 25 30
Phe Ser Leu His Tyr Gln Lys Ala Arg Gly Val Asp Asn Val Glu Tyr
35 40 45
Gln Phe Ala Val Asn Asn Asp Thr Thr Glu Leu Gln Val Arg Asp Leu
50 55 60
Glu Pro Asn Thr Asp Tyr Glu Phe Tyr Val Val Ala Tyr Ser Gln Leu
65 70 75 80
Gly Ala Ser

<210> 17

<211> 249

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)...(249)

<400> 17

agc gca gca ccc cag ctt acc ttg tcc agc ccc aac ccc tcg gac atc 48
Ser Ala Ala Pro Gln Leu Thr Leu Ser Ser Pro Asn Pro Ser Asp Ile
1 5 10 15
agg gtg gca tgg ctg ccc ctg ccc tcc agc ctg agc aat gga cag gtg 96
Arg Val Ala Trp Leu Pro Leu Pro Ser Ser Leu Ser Asn Gly Gln Val
20 25 30
ctg aag tac aag ata gag tac ggt ttg ggg aag gaa gat cag gtt ttc 144
Leu Lys Tyr Lys Ile Glu Tyr Gly Leu Gly Lys Glu Asp Gln Val Phe
35 40 45
tcc acc gag gtg cct gga aat gag aca caa ctt acg tta aac tca ctt 192
Ser Thr Glu Val Pro Gly Asn Glu Thr Gln Leu Thr Leu Asn Ser Leu
50 55 60

ggc tat gga 249
Gly Tyr Gly

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<210> 18
<211> 83
<212> PRT
<213> Mus musculus
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<400> 18
Ser Ala Ala Pro Gln Leu Thr Leu Ser Ser Pro Asn Pro Ser Asp Ile
1 5 10 15
Arg Val Ala Trp Leu Pro Leu Pro Ser Ser Leu Ser Asn Gly Gln Val
20 25 30
Leu Lys Tyr Lys Ile Glu Tyr Gly Leu Gly Lys Glu Asp Gln Val Phe
35 40 45
Ser Thr Glu Val Pro Gly Asn Glu Thr Gln Leu Thr Leu Asn Ser Leu
50 55 60
Gln Pro Asn Lys Val Tyr Arg Val Arg Ile Ser Ala Gly Thr Gly Ala
65 70 75 80
Gly Tyr Gly

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<210> 19
<211> 288
<212> DNA
<213> Mus musculus
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<220>  
<221> CDS  
<222> (1) ... (288)
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<400> 19																	
ttt	gcc	cct	gca	gaa	ttg	aag	gtg	agg	gca	aag	atg	gag	tcc	ctg	gtg	48	
Phe	Ala	Pro	Ala	Glu	Leu	Lys	Val	Arg	Ala	Lys	Met	Glu	Ser	Leu	Val		
1				5					10					15			
gtg	tca	tgg	cag	ccg	ccc	cct	cac	ccc	acc	cag	atc	tct	gga	tac	aaa	96	
Val	Ser	Trp	Gln	Pro	Pro	Pro	His	Pro	Thr	Gln	Ile	Ser	Gly	Tyr	Lys		
			20					25					30				
ctc	tac	tgg	gga	gag	gtg	gga	aca	gag	gag	gag	gca	gat	ggg	gac	cgc	144	
Leu	Tyr	Trp	Gly	Glu	Val	Gly	Thr	Glu	Glu	Glu	Ala	Asp	Gly	Asp	Arg		
		35					40					45					
ccc	cca	ggg	ggg	cgt	gga	gat	caa	gct	tgg	gac	gtc	ggg	ccc	gtg	cgg	192	

Pro Pro Gly Gly Arg Gly Asp Gln Ala Trp Asp Val Gly Pro Val Arg
50 55 60

ctg aag aag aaa gtg aag cag tat gaa ctg acc cag tta gtc cct ggc 240
Leu Lys Lys Lys Val Lys Gln Tyr Glu Leu Thr Gln Leu Val Pro Gly
65 70 75 80

agg ccg tac gag gtg aag ctc gta gct ttc aac aaa cac gag gac ggc 288
Arg Pro Tyr Glu Val Lys Leu Val Ala Phe Asn Lys His Glu Asp Gly
85 90 95

<210> 20
<211> 96
<212> PRT
<213> Mus musculus

<400> 20
Phe Ala Pro Ala Glu Leu Lys Val Arg Ala Lys Met Glu Ser Leu Val
1 5 10 15
Val Ser Trp Gln Pro Pro Pro His Pro Thr Gln Ile Ser Gly Tyr Lys
20 25 30
Leu Tyr Trp Gly Glu Val Gly Thr Glu Glu Glu Ala Asp Gly Asp Arg
35 40 45
Pro Pro Gly Gly Arg Gly Asp Gln Ala Trp Asp Val Gly Pro Val Arg
50 55 60
Leu Lys Lys Lys Val Lys Gln Tyr Glu Leu Thr Gln Leu Val Pro Gly
65 70 75 80
Arg Pro Tyr Glu Val Lys Leu Val Ala Phe Asn Lys His Glu Asp Gly
85 90 95

<210> 21
<211> 246
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(246)

<400> 21
ctg cct cct gcc cat gtc cac gca gag tca aac agc tcc act tcc att 48
Leu Pro Pro Ala His Val His Ala Glu Ser Asn Ser Ser Thr Ser Ile
1 5 10 15
tgg ctt cgg tgg aag aag cca gac ttt acc act gtc aag att gtc aac 96
Trp Leu Arg Trp Lys Lys Pro Asp Phe Thr Thr Val Lys Ile Val Asn
20 25 30
tac act gta cgc ttc ggc ccc tgg ggg ctc agg aat gct tcc ctg gtc 144
Tyr Thr Val Arg Phe Gly Pro Trp Gly Leu Arg Asn Ala Ser Leu Val

35	40	45	
acc tac tat acc agc tct gga gaa gac att ctc att ggc ggc ctg aaa	192		
Thr Tyr Tyr Thr Ser Ser Gly Glu Asp Ile Leu Ile Gly Gly Leu Lys			
50	55	60	
cca ttt acc aag tac gag ttt gcg gta cag tcc cac gga gtg gat atg	240		
Pro Phe Thr Lys Tyr Glu Phe Ala Val Gln Ser His Gly Val Asp Met			
65	70	75	80
gat ggg			246
Asp Gly			

<210> 22
 <211> 82
 <212> PRT
 <213> Mus musculus

<400> 22	
Leu Pro Pro Ala His Val His Ala Glu Ser Asn Ser Ser Thr Ser Ile	
1	15
Trp Leu Arg Trp Lys Lys Pro Asp Phe Thr Thr Val Lys Ile Val Asn	
20	30
Tyr Thr Val Arg Phe Gly Pro Trp Gly Leu Arg Asn Ala Ser Leu Val	
35	45
Thr Tyr Tyr Thr Ser Ser Gly Glu Asp Ile Leu Ile Gly Gly Leu Lys	
50	60
Pro Phe Thr Lys Tyr Glu Phe Ala Val Gln Ser His Gly Val Asp Met	
65	80
Asp Gly	

<210> 23
 <211> 252
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)...(252)

<400> 23	
aca cct cct tct gac ctg cgc ctg agc ccc ctg aca cca tcc acc gtt	48
Thr Pro Pro Ser Asp Leu Arg Leu Ser Pro Leu Thr Pro Ser Thr Val	
1	15
cgg tta cac tgg tgt ccc ccc acg gag ccc aat ggt gag att gtg gag	96
Arg Leu His Trp Cys Pro Pro Thr Glu Pro Asn Gly Glu Ile Val Glu	
20	30

tat cta att ctc tac agc aac aac cac acc cag ccc gaa cac cag tgg	144
Tyr Leu Ile Leu Tyr Ser Asn Asn His Thr Gln Pro Glu His Gln Trp	
35 40 45	
aca ctg ctc acc aca gag gga aac atc ttc agt gca gag gtc cat ggc	192
Thr Leu Leu Thr Thr Glu Gly Asn Ile Phe Ser Ala Glu Val His Gly	
50 55 60	
cta gag agt gac act cgg tat ttc ttc aag atg gga gcc cgc aca gag	240
Leu Glu Ser Asp Thr Arg Tyr Phe Phe Lys Met Gly Ala Arg Thr Glu	
65 70 75 80	
gtg ggg cct ggg	252
Val Gly Pro Gly	

<210> 24
 <211> 84
 <212> PRT
 <213> Mus musculus

<400> 24	
Thr Pro Pro Ser Asp Leu Arg Leu Ser Pro Leu Thr Pro Ser Thr Val	
1 5 10 15	
Arg Leu His Trp Cys Pro Pro Thr Glu Pro Asn Gly Glu Ile Val Glu	
20 25 30	
Tyr Leu Ile Leu Tyr Ser Asn Asn His Thr Gln Pro Glu His Gln Trp	
35 40 45	
Thr Leu Leu Thr Thr Glu Gly Asn Ile Phe Ser Ala Glu Val His Gly	
50 55 60	
Leu Glu Ser Asp Thr Arg Tyr Phe Phe Lys Met Gly Ala Arg Thr Glu	
65 70 75 80	
Val Gly Pro Gly	

<210> 25
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 25
 aagcaggtga gcctctctgg cccact

<210> 26
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 26

cttgagacag atccacagct ccagac

26

<210> 27

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 27

atccgggaag ggcttccttg tgggagcttc

30

<210> 28

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 28

gcgctgggga catcgctccag tgtatg

26

<210> 29

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 29

gttccaggtc ccgaacctgc agctctgt

28

<210> 30

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 30

ccactcccct tgccttttgg tagtgaa

27

<210> 31

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 31

gtgctgacct tctgcctgct g

21

<210> 32

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 32

ctctgtctgc tacactgggc aa

22

<210> 33

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 33

tggacgcca ggagttgg

18

<210> 34

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 34

caaattccac agaacagga

19

<210> 35

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 35

acgggcatca tcgtggg

17

<210> 36

<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 36
gaggaggaca atccgggaag ggctt 25

<210> 37
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 37
tcaagcagtt gacacttgac tgtg 24

<210> 38
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 38
taatctcaca gtgatgagag gaga 24

<210> 39
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 39
ctgtgtctca atcttgaaca aacaca 26

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 40
ggaagagaga cagtaaacad ttcgt 25

<210> 41
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 41
ctcccttcct tcctgatcgt tttc 24

<210> 42
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 42
cggctctcaa gcactgcaga ttttg 25

<210> 43
<211> 500
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (276)...(338)

<400> 43
aggctggtgg cgcgcgggcg cgtgtcccct gtggtgcagg gtggccacac tggcggggcg 60
ccccgcgtg ggccgctagc ccaagatggc gatggagggg cgggcgagct ggccgcggcc 120
cgggcccccg cgccggcccc cgtcgggccc cggccccgga ggcccgcgcc ccgcccgcgg 180
cgccgcgcct ccggagacca ctgacgcccc gcgcgccttc ccccggcggc ggcccaggcg 240
cccgacgcg gcggcagcgg cccgagcccc gccct atg gcg cgg gcg gac acg 293
Met Ala Arg Ala Asp Thr
1 5

ggc cgc ggg ctc ctg gtg ctg acc ttc tgc ctg ctg tcc gcg cgc 338
Gly Arg Gly Leu Leu Val Leu Thr Phe Cys Leu Leu Ser Ala Arg
10 15 20

ggtaagggcc cgggtggccg cagtcgcgag tgggctccc cggcgcccg gatgcttgcg 398
cgccgggggc tgtggggact tgccccagg ggggtgtgtgt ccttgctgtg cacagcctgg 458
caccgtgcgt gtccccctgc gcgtggccct tgtgcatgtg ag 500

<210> 44
<211> 21
<212> PRT
<213> Mus musculus

<400> 44

Met Ala Arg Ala Asp Thr Gly Arg Gly Leu Leu Val Leu Thr Phe Cys
 1 5 10 15
 Leu Leu Ser Ala Arg
 20

<210> 45

<211> 3756

<212> DNA

<213> Mus musculus

<400> 45

atggcgcggg	cggacacggg	ccgcggggtc	ctggtgctga	ccttctgcct	gctgtccgcg	60
cgcggggagc	tgccattgcc	ccaggagaca	actgtcaagc	tgagctgtga	tgagggaccc	120
ctgcaagtga	tcctgggccc	tgagcaggct	gtggtgctgg	actgcacttt	gggggctaca	180
gctgctgggc	ctccgaccag	ggtgacatgg	agcaaggatg	gagacactgt	actagagcat	240
gagaacctgc	acctgctacc	caatggctcc	ctgtggctgt	cctcaccctt	agagcaagaa	300
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